Applicant: Lee A. Mizzen Serial No.: 08/977,787

Filed: November 25, 1997

Page : 2 of 13

Attorney's Docket No.: 12071-011002 Client's Reference No.: SP-9 US CIP

Renumbered

## Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application

## Listing of Claims:

1-53. (Canceled)

A fusion protein comprising an antigen of an influenza virus, or an antigenic portion thereof, and a stress protein, or a portion thereof, wherein the antigen of the influenza virus is nucleoprotein, neuraminidase, M1, M2, PB1, PB2, or PA, the stress protein is an Hsp100-200, an Hsp100, an Hsp90, Lon, an Hsp70, an Hsp60, TF55, an Hsp40, an FKBP, a cyclophilin, an Hsp20-30, C1pP, GrpE, Hsp10, ubiquitin, calnexin, or a protein disulfide isomerase, and the fusion protein induces an immune response against the antigen in a mammal to whom the fusion protein is administered.

55-56. (Canceled)

57. (Previously presented) The fusion protein of claim 54, wherein the antigen of the influenza virus is nucleoprotein.

58. (Currently amended) The fusion protein of claim 54, wherein the fusion protein is A fusion protein comprising an amino acid sequence encoded by plasmid pET65MP/NP-B or plasmid pET65MP/NP-D.

59. (Previously presented) The fusion protein of claim 54, wherein the antigen includes a CTL epitope.

60. (Canceled)

Applicant: Lee A. Mizzen

Serial No.: 08/977,787

Attorney's Docket No.: 12071-011002

Client's Reference No.: SP-9 US CIP

Filed: November 25, 1997

Page : 3 of 13

48

(Currently amended) A fusion protein comprising an antigen of an influenza virus, or an antigenic portion thereof, and a bacterial stress protein, or a portion thereof, wherein the antigen of the influenza virus is nucleoprotein, neuraminidase, M1, M2, PB1, PB2, or PA and the fusion protein induced induces an immune response against the antigen in a mammal to whom the fusion protein is administered.

49

62. (Previously presented) The fusion protein of claim 61, wherein the bacterial stress protein is a mycobacterial stress protein.

(Previously presented) A composition comprising the fusion protein of claim 54 and a pharmaceutically acceptable excipient, carrier, diluent, or vehicle.

7

64. (Previously presented) A method of inducing an immune response against an antigen of an influenza virus, the method comprising administering the fusion protein of claim 54 to a vertebrate in an amount effective to induce an immune response against the antigen.

(Previously presented) The method of claim 64, wherein the fusion protein is administered in combination with a pharmaceutically acceptable excipient, carrier, diluent, or vehicle.

46

of the influenza virus, the method comprising administering the fusion protein of claim 58 to a vertebrate in an amount effective to induce an immune response against the antigen.

47

67. (Previously presented) The method of claim 66, wherein the fusion protein is administered in combination with a pharmaceutically acceptable excipient, carrier, diluent, or vehicle.

68. (Previously presented) The fusion protein of claim 54, wherein the immune response is a cell mediated immune response.

Applicant: Lee A. Mizzen

Serial No.: 08/977,787

Attorney's Docket No.: 12071-011002

Client's Reference No.: SP-9 US CIP

Filed: November 25, 1997

Page : 4 of 13

(Previously presented) The fusion protein of claim 68, wherein the cell mediated immune response is a cell mediated cytolytic immune response.

70-87. (Canceled)

88. (Previously presented) The fusion protein of claim 68, wherein the cell mediated immune response is a class I-restricted T cell response.

39. (Previously presented) The fusion protein of claim 68, wherein the cell mediated immune response is a class II-restricted T cell response.

90. (Previously presented) The fusion protein of claim 59, wherein the CTL epitope is a class I-restricted T cell epitope.

91. (Previously presented) The fusion protein of claim 59, wherein the CTL epitope is a class II-restricted T cell epitope.

92. (Previously presented) The fusion protein of claim 62, wherein the stress protein is hsp65.

93. (Previously presented) The fusion protein of claim 62, wherein the stress protein is hsp71.

94. (Canceled)

95. (Previously presented) The method of claim 64, wherein the immune response is a cell mediated immune response.

96. (Previously presented) The method of claim 95, wherein the cell mediated immune response is a cell mediated cytolytic immune response.

Applicant: Lee A. Mizzen Serial No.: 08/977,787 Filed

: November 25, 1997

Page : 5 of 13

11

97. (Previously presented) The method of claim 95, wherein the cell mediated immune response is a class I-restricted T cell response.

Attorney's Docket No.: 12071-011002

Client's Reference No.: SP-9 US CIP

12 98. (Previously presented) The method of claim 95, wherein the cell mediated immune response is a class II-restricted T cell response.

17 99. (Previously presented) The fusion protein of claim 54, wherein the stress protein is a mammalian stress protein.

100. (Previously presented) The fusion protein of claim 99, wherein the mammalian stress protein is a human stress protein.

101. (Previously presented) The fusion protein of claim 61, wherein the bacterial stress protein is an enterobacterial stress protein.

102. (Previously presented) The fusion protein of claim 61, wherein the bacterial stress protein is an E. coli stress protein.

103. (Previously presented) The fusion protein of claim 62, wherein the mycobacterial stress protein is a stress protein of Mycobacterium leprae, Mycobacterium tuberculosis, or Mycobacterium bovis.

104. (Previously presented) The fusion protein of claim 54, wherein the stress protein is an Hsp100-200.

105. (Previously presented) The fusion protein of claim 104, wherein the Hsp100-200 is a Grp170.

106. (Previously presented) The fusion protein of claim 54, wherein the stress protein is an Hsp100.

Applicant: Lee A. Mizzen

Serial No.: 08/977,787

Attorney's Docket No.: 12071-011002

Client's Reference No.: SP-9 US CIP

Filed: November 25, 1997

Page : 6 of 13

a TF55.

107. (Previously presented) The fusion protein of claim 106, wherein the Hsp100 is a mammalian Hsp110, a yeast Hsp104, or a clpA, clpB, clpC, clpX or clpY stress protein.

108. (Previously presented) The fusion protein of claim 54, wherein the stress protein is an Hsp90.

109. (Previously presented) The fusion protein of claim 108, wherein the Hsp90 is a yeast Hsp83 or Hsc83 or a human Hsp90α, Hsp90β, or Grp94.

170. (Previously presented) The fusion protein of claim 54, wherein the stress protein is Lon.

26 141. (Previously presented) The fusion protein of claim 54, wherein the stress protein is an Hsp70.

(Previously presented) The fusion protein of claim 111, wherein the Hsp70 is a mammalian Hsp72 or Hsp73.

173. (Previously presented) The fusion protein of claim 54, wherein the stress protein is an Hsp60.

144. (Previously presented) The fusion protein of claim 54, wherein the stress protein is

20 W5. (Previously presented) The fusion protein of claim 54, wherein the stress protein is an Hsp40.

116. (Previously presented) The fusion protein of claim 54, wherein the stress protein is an FKBP.

Applicant: Lee A. Mizzen
Serial No.: 08/977,787

Attorney's Docket No.: 12071-011002 Client's Reference No.: SP-9 US CIP

Filed : November 25, 1997

Page : 7 of 13

32

X17. (Previously presented) The fusion protein of claim 116, wherein the FKBP is FKBP12, FKBP13, FKBP25, FKBP59, Fpr1, or Nep1.

33

118. (Previously presented) The fusion protein of claim 54, wherein the stress protein is a cyclophilin.

(Previously presented) The fusion protein of claim 118, wherein the cyclophilin is cyclophilin A, cyclophilin B, or cyclophilin C.

35 420. (Previously presented) The fusion protein of claim 54, wherein the stress protein is an Hsp20-30.

36

121. (Previously presented) The fusion protein of claim 120, wherein the Hsp20-30 is a Tcp1, TriC, or thermosome.

37

122. (Previously presented) The fusion protein of claim 54, wherein the stress protein is a ClpP.

38

123. (Previously presented) The fusion protein of claim 54, wherein the stress protein is a GrpE.

124. (Previously presented) The fusion protein of claim 54, wherein the stress protein is an Hsp10.

125. (Previously presented) The fusion protein of claim 124, wherein the Hsp10 is GroEs or Cpn10.

126. (Previously presented) The fusion protein of claim 54, wherein the stress protein is a ubiquitin, calnexin, or protein disulfide isomerase.

Applicant: Lee A. Mizzen
Serial No.: 08/977,787
Filed: November 25, 1997

Attorney's Docket No.: 12071-011002 Client's Reference No.: SP-9 US CIP

Page : 8 of 13

55

\$27. (Previously presented) The fusion protein of claim 61, wherein the bacterial stress protein is an Hsp90, Hsp70, Hsp60, Hsp40, or Hsp10.

128. (Previously presented) The fusion protein of claim 127, wherein the Hsp90 is an HtpG.

57

129. (Previously presented) The fusion protein of claim 127, wherein the Hsp70 is a DnaK.

130. (Previously presented) The fusion protein of claim 127, wherein the Hsp60 is an hsp65 or GroEL.

(Previously presented) The fusion protein of claim 127, wherein the Hsp40 is a DnaJ.

132. (Previously presented) The fusion protein of claim 127, wherein the Hsp10 is a GroES.

133. (Previously presented) The fusion protein of claim 54, wherein the antigen of the influenza virus is neuraminidase.

134. (Previously presented) The fusion protein of claim 54, wherein the antigen of the influenza virus is M1 or M2.

44

135. (Previously presented) The fusion protein of claim 54, wherein the antigen of the influenza virus is PB1, PB2, or PA.